

REMARKS

In the April 24, 2007 Office Action, claims 1-29 were rejected, and claims 14 and 15 and the specification were deemed objectionable. This Response amends claims 1-5, 9-11, 13-16, and 22, cancels no claims, and introduces no new claims. After entry of the foregoing amendments, claims 1-29 (29 total claims; 4 independent claims) remain pending in the application. Reconsideration of the application is respectfully requested in view of the above amendments and the following remarks.

Objections

Paragraph 0031 of the specification is amended to address the Examiner's concern. Accordingly, Applicant requests the withdrawal of the objection to the disclosure. Claims 14 and 15 are amended to address the Examiner's concern. Accordingly, Applicant requests the withdrawal of the objection to claims 14 and 15.

Rejection Under §112

Claims 13 and 15 are amended to address the Examiner's concern. Accordingly, Applicant requests the withdrawal of the objection to claims 13 and 15.

Rejection Under §103(a)

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation to modify a reference or to combine the teachings of multiple references. Second, there must be a reasonable expectation of success. Third, the prior art must teach or suggest all of the recited claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, not in Applicant's disclosure. Applicant respectfully submits that the Examiner has not met all of the above criteria.

The Examiner has rejected claims 1-23 and 25-29 as allegedly being unpatentable over Beauchamp et al., U.S. Patent No. (5,449,413) issued Sept. 12, 1995 (hereinafter "Beauchamp") in view of Aiken (Photovoltaic Specialists Conference, 2000) (hereinafter "Aiken"). Applicant respectfully traverses the rejections.

Independent claims 1, 9, 16, and 22 recite allowing solar energy wavelengths comprising “greater than 1.1 microns” through “1.2 or 1.3 microns” to pass through the coating. Neither Beauchamp nor Aiken nor the combination of Beauchamp and Aiken teach, suggest, or motivate allowing solar energy wavelengths comprising “greater than 1.1 microns ” through “1.2 or 1.3 microns” to pass through the coating. In contrast, the coatings of Beauchamp are specifically designed to attenuate wavelengths greater than 1.1 microns, including wavelengths through 1.2 or 1.3 microns (see FIGs. 7A and 7B). Thus, Beauchamp teaches away from claims 1, 9, 16, and 22. Moreover, Aiken does not compensate for the shortcomings of Beauchamp. Therefore, Beauchamp in view of Aiken does not teach or suggest all of the recited claim limitations in claims 1, 9, 16 and 22.

Therefore, the systems and methods as recited in independent claims 1, 9, 16, and 22 are not unpatentable over Beauchamp in view of Aiken.

For at least the same reasons, claims 2-8 (which depend from claim 1), claims 10-15 (which variously depend from claim 9), claims 17-21 (which depend from claim 16), and claims 23-29 (which depend from claim 22), are also not unpatentable over Beauchamp in view of Aiken. Accordingly, Applicant requests the withdrawal of the §103 rejections of claims 1-23 and 25-29.

The Examiner has rejected claims 22 and 24 as allegedly being unpatentable over Beauchamp in view of Nishioka et al. (Photovoltaic Specialists Conference, 2002) (hereinafter “Nishioka”). Applicant respectfully traverses the rejections.

Claims 22 and 24 recite allowing solar energy wavelengths comprising “greater than 1.1 microns” through “1.2 or 1.3 microns” to pass through the coating. Neither Beauchamp nor Nishioka nor the combination of Beauchamp and Nishioka teach, suggest, or motivate allowing solar energy wavelengths comprising “greater than 1.1 microns” through “1.2 or 1.3 microns” to pass through the coating. In contrast, the coatings of Beauchamp are specifically designed to attenuate wavelengths greater than 1.1 microns, including wavelengths through 1.2 or 1.3 microns (see FIGs. 7A and 7B).

Moreover, Nishioka does not compensate for the shortcomings of Beauchamp discussed above. Therefore, Beauchamp in view of Nishioka does not teach or suggest all of the recited limitations in claims 22 and 24.

Therefore, the systems and methods as recited in claims 22 and 24 are not unpatentable over Beauchamp in view of Nishioka.

Notably, the subject matter recited in Applicant's claims fills an unmet need that is not satisfied by the prior art. Allowing wavelengths "greater than 1.1 microns" through "1.2 or 1.3 microns" to pass through the coating makes possible the use of more of the "0.35 to 1.8 microns" of light spectrum used by the triple junction solar cells (see Applicant's application paragraph 0023, lines 13-17). Considering the GEO, MEO, and LEO applications of such solar cells and the enormous cost of launching satellites, any extension of this wavelength band is beneficial because of increased energy generation, weight savings, and reduced size for the same power output. Accordingly, for these additional reasons the extended wavelength band recited in Applicant's claims is a nonobvious improvement over the cited prior art.

Conclusion

In conclusion, for the reasons given above, all claims now presently in the application are believed allowable. Hence, Applicant submits that the present application is in condition for allowance. Favorable reconsideration and withdrawal of the objections and rejections set forth in the above-noted Office action, and an early Notice of Allowance are requested.

Should the Examiner have any questions or wish to further discuss this application, Applicant requests that the Examiner contact the Applicant's representative at 480-385-5060.

If for some reason Applicant has not requested a sufficient extension and/or have not paid a sufficient fee for this response and/or for the extension necessary to prevent abandonment on this application, please consider this as a request for an extension for the required time period and/or authorization to charge Deposit Account No. 50-2091 for any fee which may be due.

Respectfully submitted,

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